BOTANICAL GAZETTE.

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A NEW CUSCUTA, new at least to North America, comes now from California. A great wanderer is this *C. corymbosa*, which nearly 40 years ago stirred up the botanists of Europe, and the agriculturists not less. This interesting plant has quite a little history of its own. At the period indicated, between 1839 and 1843, an unknown *Cuscuta* made its appearance almost simultaneously in different parts of western Europe, and, singularly enough, always on Lucerne fields. In Germany it was described as *C. suaveolens*, *C. Hassiaca*, *C. diaphana*, and *Engelmannia migrans*, until Choisy, in DC. Prod., recognizing its American origin, took it for *C. corymbosa*, R. & P. In my monograph of Cuscuta, 1859, I established the identity of the immigrant with the South American *C. racemosa*, Mart., which had been introduced into Europe with the much vaunted Chilian *Alfalfa*, in reality the old established European fodder plant, the *Lucerne*, and which proved very destructive to its nurse-plant. After 10 or 15 years the energetic measures of the farmers, together with wet and cool summers, in which the seeds did not mature, seem to have eradicated the plant entirely, and as far as I am informed, it has not been heard of again in Europe. But now, lo and behold, our wanderer makes its appearance in northern California, and, precisely as before in Europe, in Alfalfa fields, "proving very injurious." It has been, without doubt, here also imported from Chili.

Rev. E. L. Greene, who has found so many new native plants in the Shasta Valley, sends also this troublesome newcomer. How long it has been there or whether it has appeared in other parts of California, where under the well-sounding name of Alfalfa the Lucerne is frequently cultivated, is as yet unknown, nor whether it will establish itself permanently. It may be well to direct the attention of the farmers, who cultivate Alfalfa, to this dangerous enemy and to urge them to destroy any dodder which may show itself in their fields, before it can spread or mature seeds. *C. racemosa*, Mart., belongs like our common *C. Gronovii* to the section *Clisto grammica*, characterized by two styles of unequal length tipped with capitate stigmas and a not-opening (baccate) capsule. Ovary and capsule are thickened towards the apex and somewhat pointed; inflorescence loosely paniculated with longish pedicels; flowers 1½—2 lines long, of thin texture, tube of corolla deeply campanulate, widening upwards, spreading lobes inflexed at the acute tip; scales nearly the length of the tube; capsule commonly enveloped by the corolla.

The variety, *Chiliana*, Eng. Cusc. p. 505, to which this form belongs, has larger and more delicate flowers than the original Brazilian type.—G. ENGELMANN.

THE OLDEST LIVING BOTANIST.—The oldest living botanist is probably the Swede Elias Fries, born in 1794, and this eminent man is still active.

He is a profound philosophical Botanist, the basis of whose systematic arrangement of the Fungi is still followed; and the Lichenological system presented in his *Lichenographia Europea Reformata*, published in 1831, is still, with such modifications as the advance of knowledge requires, the best that has been prepared, and is not likely to be superseded. The introductory remarks should be studied by all who take up this branch of botany, and the descriptions have not been surpassed. Fries's botanical publications are numerous, the most important of them being devoted to the Fungi and Lichens. In 1872 he commenced the publication of an illustrated work on Fungi, several fascicles of which have been published.—W.

DIPLOPAPPUS ERICOIDES, T. & G.—To save labor to some others who, like myself, work under the double disadvantage of a rather limited library and an herbarium (rich enough in the later new species) with but few specimens from the original sets made prior to 1862, I put the following in print. From our present standpoint it is evident that *Diplopappus* as formerly understood must be partitioned out among other neighboring genera, and of the species that concern us here one goes to section ERICAMERIA of *Aplopappus*, and the other to section ORTHOMERIS of *Aster*. In the unavoidable changing of names a confusion arises under the name above given, i. e., *Diplopappus ericoides*, there being two plants that bear the name in herbaria and books. The following may in some sense clear up the matter:

Diplopappus ericoides, T. & G. *Eucephalus ericoides*, Nutt. "*Inula? ericoides*, Torr! in Ann. Lyc., New York, 2, p. 212. *Chrysopsis ericoides*, Eaton, Man. Bot."

Now placed in *Aster* under Sect. ORTHOMERIS. As the name *ericoides* is preoccupied in this genus I suggest for it *Aster ericaefolius*, which indicates even more closely its general habit.

See also *Diplopappus ericoides*, T. & G., Vol. V., King's Report; Pl. Wright., p. 78; Pl. Fendl., p. 69; Bot. Mex. Bound., p. 78.

Diplopappus ericoides, Less. *Aplopappus ericoides*, DC., and apparently also of Hooker and Arnott. See DC., Prod. V., p. 278; Bot. Beechy, p. 146; and Fl. Cal. I, p. 313.

In the last, *Ericameria microphylla*, Nutt., is also cited as another name for the same, and by this it appears in Flora of North America, T. & G., 2, p. 236.

The two plants are so different in habit,—the one suggestive of (so far as arrangement of the foliage goes) *Erica*, and the other of *Adenostoma fasciculatum*, Hook & Arn., or of *Eriogonum fasciculatum*, Benth.—as well as in habitat, that any further description is unnecessary.—J. T. ROTHROCK.

BOTANICAL RAMBLES IN EAST FLORIDA.—It was the 16th of February last when the fast and comfortable steamer "Gen'l. Sedgwick" landed me at the beautiful little town of Palatka, located upon an elevated site on the west bank of the river, and about 75 miles from Jacksonville. The enterprise and neatness of the place with its pleasant surroundings make it at once attractive and inviting to the traveler. I walked through the open built town to a hotel and my attention was attracted and my mind absorbed by the novelties along the way. Everywhere appeared the faces of Northern citizens. The handsome white dwellings and large hotels were pleasing to the eye. The natives struggling through the deep loose sand in the streets with their ox-teams suggested poverty with the ludicrous. The wild orange trees laden with golden fruit, and perfuming the air with their fragrant blossoms, ornamented the streets. The mulberry was dropping its ripe fruit. The mocking birds, perched on the shrubs and trees, made the air tremulous with their many and varied tuned melodies. The bee was homeward bound, ladened with the poisonous pollen of the Jessamine. The grasshopper manifesting all the suppleness of a midsummer day, and even the house fly, emboldened with brazen effrontery, would alight in the stranger's way. Indeed, everywhere seemed to be life and it was difficult for me to realize the transition from the cold northland to this balmy June climate of the "Sunny South."

The St. John's is a beautiful stream of water, placid and winding with many fine coves along its banks, and neat cottages with fine orange groves at frequent intervals. So tranquil are its waters that the current is not perceptible save at times as marked by a line of the single floating plants of the *Pistia spathulata*, Michx., which advance from and recede to the coves with the falling and rising of the tide. After several hours sailing the vegetation along the river appeared more advanced, the maple was just in full foliage and the black willow green with leaves, the cypress was dropping its long pendulous aments, and the *Styrax grandifolia*, Ait., white with blossoms. The Australian pine and the saw palmetto are constant companions, and so abundant are the large root stems of the latter that the tannic acid washed from them by the rains and uniting

with the iron in the soil will produce ink, it is thought, sufficient to account for the dark color of the water of this grand river of four hundred miles in length.

On this more elevated land at Palatka are seen large trees of *Quercus virens*, Ait., and *Magnolia grandiflora*, L. In the streets and lots appear *Nasturtium tanacetifolium*, H. & A., *Sisymbrium canescens*, Nutt., *Sagina subulata*, Wimmer, and *Dichondra repens*, Forst., var., *Carolinensis*, Chois. Out of town one gets into the open pine land where *Pinus Australis*, Michx., is monarch of the forest. Along the streamlets and ponds *Magnolia glauca*, L., *Persea Carolinensis*, Nees., var. *palustris*, Chapm., *Salix nigra*, Marsh., *Myrica cerifera*, L., *Itea Virginica*, L., *Ascyrum Crux-Andreæ*, L., *Gelsemium sempervirens*, Ait,, and *Smilax laurifolia*, L., principally make up the thickets. In the open pine land *Quercus virens*, Ait., var., and *Catesbei*, Michx., *Ilex Dahoon*, Walt., and *glabra*, Gray, *Andromeda nitida*, Bartr., *speciosa*, Mx., and *ferruginea*, Walt., contribute mainly to the woody undergrowth. Perhaps a mile from the river the land makes a gentle rise and the low pine land changes to the drier sandy upland. It was on this soil where *Asimina grandiflora*, Dunal, and *Ceanothus microphyllus*, Michx., occurred, and just commenced to flower. With them appeared others of equal interest, like *Sporobolus junceus*, Kunth, *Houstonia rotundifolia*, Mx., *Berlandiera subacaulis*, Nutt., *Phlox procumbens*, Lehm., *Crotalaria ovalis*, Pursh, and the prostrate *Astragalus obcordatus*, Ell. Intermediate to the dense growth, along the river, of deciduous trees and the piny uplands back of it, extend the piny lowlands, the soil of which is wet and requires draining to render it fit for cultivation. In this damper soil *Drosera brevifolia*, Pursh, *Erigeron vernum*, T. & G., *Ascyrum amplexicaule*, Mx., *Hypericum fasciculatum*, Lam., and var. *aspalathoides*, Chapm., *Polygala lutea*, L., *Aster squarrosus*, Walt., not in flower, *Pinguicula lutea*, Walt., and *pumila*, Mx., *Bartonia verna*, Muhl., and *tenella*, Muhl., *Spiranthes gracilis*, Big., *Listera australis*, Lindl., *Calopogon parviflorus*, Lindl. *Hypoxys juncea*, Smith, *Paepalanthus flavidus*, Kunth, and *Ophioglossum bulbosum*, Michx., appeared at home. *Sarracenia variolaris*, Michx., not yet in flower, but the new leaves were of common occurrence. More sparingly appeared *Vaccinium myrsinites*, Michx., *Satureia? rigida*, Bart., and *Coreopsis aurea*. Ait., the last in general appearance and habit resembling our common *Bidens*. Around the shallow ponds, of which there are many in these pine lands, grew *Utricularia striata*, LeConte, and *subulata*, L. The area for convenient field work after a week's ramble became somewhat monotonous, and with one more walk, in which *Olea Americana*, L., was seen in bloom and *Rhizogonium spiniforme*, Birk., *Tetraplodon australis*, Sull. & Lesq., and *Bryum provinciale*, Phil., in fruit, were added to the list, I took my departure on the U. S. Mail Steamer to another field, about 125 miles farther south, on Lake Monroe. Sailing on this sluggish stream, distant views are intercepted by the frequent and sudden windings of the river and the large trees with the dense undergrowth along its banks. The large ocean steamers are now replaced by smaller ones, and the river becomes narrower and more winding, turning upon itself at sharp angles almost every quarter or half mile, and in many places boats can pass each other only at the interval of the bends. I was impressed with the great abundance of the mistletoe, appearing for a distance of over fifty miles along the river. Scarcely an oak could be seen which had not tufts of this green plant growing on some of its limbs. Occasionally could be seen dead oaks with the dead parasitical growth attached to its limbs, suggesting the idea of mutual starvation. Large red tufts of *Tillandsia cæspitosa*, LeConte, upon the oak, and green mats of *Polypodium incanum*, Swz., on the declining trunks and larger limbs of the same tree, were also of common occurrence, The *Sabal Palmetto*, R. & S., which heretofore appeared sporadically and dwarfed, now became very abundundant, frequently forming dense groves or palmetto hummocks, and attaining a height of 30 to 40 feet. The following morning the steamer stopped a few minutes at a wood station for fuel, presenting an opportunity to examine the vegetation. Although but a five minutes' privilege, I detected *Vitaria lineata*, Swz., *Polypodium aureum*, L. and *Octoblepharum albidum*, Hedw., all on the trunk

of the Cabbage Palmetto. The golden polypod, as afterwards seen, was most abundant and vigorous on the trunk, 20 to 30 feet from the ground, just beneath and in the shade of the spreading Palmetto leaves. We arrived the same day at Mellonville, located on the south bank of Lake Monroe, a quaint old town with little for attraction to the stranger. The vegetation, however, had changed, and I was soon located and prospecting for new plants. Many of my former acquaintances appeared, and in better collecting condition. but their enumeration will be omitted. The contour and topography of the country, the nature of the soil, and the character of the timber, are essentially the same as at Palatka, except the dense Palmetto hummocks replace the maple farther north. Here also the dense woody timber skirts the lake, and back of this extends the piny lowlands to the piny uplands. On this elevated or salamander land, where these vigilant miners display wonderful activity in the construction of a great number of diminutive mounts, I added to my list *Helianthemum Carolinianum*, Mx., *Stipulicida setacea*, Mx., *Polygala grandiflora*, Walt., *Indigofera tinctoria*, L., *Rhynchosia tomentosa*, var., *monophylla*, T. & G., and *Desmodium triflorum*. The last, as Dr. Chapman tells me, is an introduction from the Indies. In the lowlands grew *Clematis Baldwinii*, T. & G., *Oldenlandia glomerata*, Mx., *Pterocaulon pychnostachyum*, Ell., *Leptopoda puberula*, McBride, *Chaptalia tomentosa*, Vent., *Lygodesmia aphylla*, DC., *Centunculus minimus*, L., *Pinguicula elatior*, Mx., *Gratiola quadridentata*, Mx., *Buchnera elongata*, Swartz, *Sabbatia Elliottii*, Steud., *Tradescantia rosea*, Vent., *Xyris brevifolia*, Mx., *Eriocaulon gnaphaloides*, Mx., and *Fuirena scirpoidea*, Vahl. In the drier and more barren of these lands appeared *Polygala nana*, DC., the dwarf of the genus. In the streets of the village were patches in bloom of *Vinca rosea*, L., and *Eragrostis ciliaris*, Link. Along the lake or river, for the former is simply an expansion of the latter, was found *Sagittaria lancifolia*, L., and on the muddy flats, *Sesuvium pentandrum*, Ell., *Micranthemum Nuttallii* Gr., *Lippia nodiflora*, Mx., and *Azolla Caroliniana*, Willd., the last, like the *Pistia*, assuming an amphibious nature, growing equally well on the land and in the water. In the adjacent hummocks the vegetation was interesting and rich in species, yielding in abundance and in good condition S. Watson's variety of *Lobelia Cliffortiana*, Willd., with *Vicia micrantha*, Nutt., *Ilysanthes grandiflora*, Benth., *Micromeria Brownei*, Benth., *Eryngium Baldwinii*, Spreng., *Samolus Valerandi*, L., var. *Americanus*, Gr., and *Iris hexagona*, Walt., with others of equal interest, like *Berchemia volubilis*, DC., coming in flower, *Epidendrum venosum*, Lindl., in fruit, *Vicia acutifolia*, Ell., *Leptocaulis dicaricatus*, DC., *Tillandsia bracteata*, Chapm., with its bright and glossy scarlet bracts, the prolific *T. juncea*, LeConte, and *T. utriculata*, LeConte, *Myrica inodora*, Bartr., *Aspidium patens*, Swz., and *Blechnum serrulatum*, Mx., the last abundant and in fine condition, as well as the *Vittaria* and the golden polypod, previously detected. Near the village of Enterprise, on the north bank of the lake, I met *Zanthoxylum Carolinianum*, Lam., *Modiola multifida*, Mœnch., *Parietaria debilis*, Forst., *Iresine diffusa*, H. & B., and, on the banks of a stream flowing from a large sulphur spring, *Hydrochloa Carolinensis*, Beauv., in dense mats.—A. P. GARBER. [*To be continued.*]

CATALOGUE OF THE FLORA OF THE WABASH VALLEY BELOW THE MOUTH OF WHITE RIVER.—This botanical paper, by J. Schneck, M. D., appears in the report of the Geological Survey of Indiana for 1875. The plants contained in the catalogue are principally from two counties in Indiana, Gibson and Posey, and one county in Illinois, Wabash, although three other counties of the latter State are represented. The region embraced is one of the most interesting and well defined botanical fields in the state and the many rare plants contained in this list are only what botanists acquainted with the topography of the country have expected. Perhaps the most striking physical features of the Lower Wabash are the cypress swamps and bayous with their wealth of aquatic plants and the barrens of the higher ground. These natural openings covered with but scant if any forest growth yield our most prized plants, and a very rapid

glance over this catalogue will show the many good things such localities have given to our author. It is to be regretted that Dr. Schneck's time is so fully occupied that he cannot keep on hand a stock of duplicates for exchange. A striking feature of the flora of this region is the abundance of southern types. Up this low valley, running nearly north and south, many plants have found their way which one would scarcely expect to meet except in a more decidedly southern flora. These low rich bottoms have yielded such monsters in growth, especially among the climbers, that one is reminded of a South American jungle. Just hear Dr. Schneck's testimony on this subject. "Here I have found a grape vine (*Vitis Labrusca*), thirty-two inches in circumference, and near one hundred and fifty feet long, hanging from the massive branches of a lofty tree, appearing as if a monstrous cable suspended from the overhanging sky; Trumpet Vine (*Tecoma radicans*), thirty-eight and one-half inches in circumference, and climbing to the topmost branches of a tall tree, decorating it from root to top with a profusion of its foliage and orange-red trumpet shaped flowers; Cross Vine (*Bignonia capreolata*), ascending in a straight line the massive shaft of an oak, elm, or black walnut, to the height of seventy-five feet, its green, scarlet tinged foliage of winter persisting until late spring; Single-seed Cucumber (*Sicyos angulatus*), matting all bushes and vegetation, within ten feet of its root, into a thicket, or climbing up a neighboring tree to the distance of sixty-three feet; and in one instance, six climbing plants (*Smilax rotundifolia, Menispermum Canadense, Ampelopsis quinquefolia, Bignonia capreolata, Vitis cordifolius, Aristolochia tomentosa*), supporting themselves on the body and branches of one small American Elm." The author also gives us the names of several species which he thinks are disappearing with advancing civilization and will eventually have to be stricken from the flora of the Lower Wabash. The principal ones are *Cypripedium candidum* and *parviflorum*, *Aletris farinosa*, *Lilium Philadelphicum* and *superbum*, *Scilla Fraseri*, *Opuntia Rafinesquii*, and *Mertensia Virginica*. The author also states that as prairies were converted into fields the annual fires were soon stopped and as a consequence, in a few years a thick growth of young trees has sprung up, a view which, although it may be correct for a few localities, Prof. J. D. Whitney in recent numbers of the American Naturalist teaches us must be scouted as accounting for the general distribution of the prairie regions. Of course it would be tedious and useless to try to enumerate all the interesting plants listed in this catalogue and we can only refer those interested on the subject to the State publication in which this report occurs.—J. M. C.

SOME IOWA PLANTS.—At the suggestion of friends, in the interest of science, I send you the following names to be added to the Catalogue of Iowa plants. To simplify, we class them by the years in which they were discovered.

1876. To begin, let us note, in the interest of comparative botanical science and the geographical distribution of plants, that those marked with a star (*) do not occur in Prof. Aughey's Catalogue of Nebraska plants, in the rarity and number of which we may feel a certain state pride. I have specimens of all named, and many to spare in most cases.

*Trifolium reflexum**, L., June 26th, old channel of Cedar River, at the bridge five miles above Cedar Rapids, perhaps floated down from Minnesota.

*Œnothera pumila**, L., 26th June, railroad grade, and dry, steep banks, near the above locality.

Penstemon albidus, Nutt, 26th June, near water at the base of the high railroad grade, one mile above Cedar Rapids. Truly fine and rare.

Fraelichia Floridana, Moquin, 13th September, street near the river, Cedar Rapids.* Quite rare.

To which I may add an introduced plant found by Prof. McAfee on the College grounds, *Lotus corniculatus*,* L. How introduced we can only imagine.

Sonchus oleraceus,* L., 13th September, street, Cedar Rapids.

Silene nocturna,* L., Ames, self-introduced, C. Lambs.

Æthusa Cynapium, L., streets and yards, Ames.

Croton monanthogynum, Mich., C. & N. W. R. R. grade, College farm, west end of the last bridge between Ames and College, August 1st. A rare plant, confined to said locality. I should not omit to say I found *Gratiola Virginica* only two miles north of Vinton.

Lathyrus ochroleucus and the very rare variety of *Purple Achillea*, five miles north of Cedar Rapids along the railroad track.*

1875. *Cnicus benedictus*,* L., Woodbine and Ames. (Int.)

Astragalus Plattensis, Nutt., Mo. Valley Junction and Crescent City, sand bluffs, Harrison and Pottawattamie counties, Iowa.

Lespedeza violacea, Pers., Keokuk Cemetery, 1866. This is indigenous and common there.

Lathyrus palustris, var. *myrtifolius*,* Muhl., Woodbine, hazel brush.

Eupatorium album?* Woodbine and Ames.

Euphorbia cyathophora, Jacq., Woodbine, new street, Cedar Rapids, and banks of Squaw creek, Ames.

Chenopodium glaucum, L., streets of Keokuk, 1866, and Dunlap, Harrison county.

Populus angulata, Ait., our White Cottonwood. Common throughout the state.

Archangelica hirsuta, Torr. and Gray, deep ravine, Mo. Valley Junction, Harrison county.

Caragana arborescens, Gray, Dea. Kingsbury's, Ames, and common in Ames, also at the College.

Ammania latifolia,* L., near Woodbine, muddy brooks, in deep ravines; scarce seen in different localities in two successive years.

Carex varia, Muhl., everywhere; our earliest species.

Andropogon Virginicus, L., Woodbine to Ames.

Vilfa aspera, Beauv. Railroad, Ames to Woodbine.

Panicum amarum, Ell., prairies and railroad, Woodbine to Ames.

Eatonia Pennsylvanica, Gray., abounds from Crescent City to Ames; a beautiful grass.

Glyceria fluitans, R. Brown, 1876; ditches, Ames, at Stearn's and Bacon's, one mile north of Ames. Another beautiful, rare grass.

Besides these the writer may claim to have added to the *printed* catalogs of Iowa plants, the following, as they are all confined to the Mo. River slope, where he spent eight years in diligent research.

Oxybaphus albidus,* Sweet. Rare, on grade of Sioux City R. R., near Mo. Valley Junction.

Oxybaphus angustifolius, Sweet. Rare and growing with the above; also near Dennison, Crawford county.

Chenopodium ambrosioides,* L. One locality alone between Logan and Magnolia, Harrison county, roadsides.

Euphorbia hexagona, Nutt., growing with or near *Euphorbia serpens*,* H. B. K. Common *only* on sandy grade of the Sioux City Railroad, near Mo. Valley Junction.* I only *thought* I saw *E. serpens* ten miles up Boyer Valley.

Aplopappus spinulosus, DC. (Small form, Gray). Common on the steep sand bluff at Mo. Valley Junction.

Rosa lucida, Ehrhart, with a var., very glandular, hairy all over capsule and calyx, which ought to be called *R. lucida*, var. *glandulosa*.

Tradescantia rosea, Vent., abounds along C. & N. W. R. R. from Ames to Woodbine; while *T. Virginica* abounds in its glory, rank and gorgeous, in Cedar River Valley,

but nowhere west of that. The latter is three times the height of the former, and constantly *deep blue.*

I was surprised to see the difference in grasses here from those of the rich, alluvial valleys of the west of the State; *Agrostis scabra*, Willd., *Aristida gracilis*, Ell., *Festuca tenella*, Willd., and *Sporobolus heterolepis*, Gray, *all* indicative of a thin soil and just suited to our decomposed Iowa-granite sub-soil. Hence I fear, botanical science with the geographical distribution of plants, most exactly confirms the exhibit of Iowa soils at the Centennial—making that of Story county the thinnest of all; a fact confirmed by abounding *Juncus tenuis* and *Artemisia Canadensis*, both unknown farther west. I think I make out in Story county these four *Salices* which do not occur in the west of the State, viz.: *Salix humilis*, *S. petiolaris*, *S. sericea* and *S. eriocephala.* The willows are a notoriously difficult family, but, after careful study and search during the season, I am fully satisfied there are no "Red" or "Diamond Willows" in Story county, nor anywhere east of the "Divide" at the head of Boyer Valley. I am equally convinced that they are NEW SPECIES, and not at all *Salix cordata* with a var. *myrtifolia.* With all their greater need of timber for posts, the common-place pioneers of Mo. River Valley *could not* have discovered in 20 years what the "live Yankee" had not discovered in 250 years in the east, *that these willows were as durable as Red Cedar* for fence posts! How long shall we wait for names to be assigned by the Masters? Or, shall we who alone have the tree, alive, or in lumber, to study with all due care, call them *Salix rhomboidea* and *Salix rhomboi-indentata*? For *both* species are *noted* for their diamond-shaped depressions in root and trunk, from which our most unique canes are made.—ROBERT BURGESS, *Ames, Iowa, Nov.*, 1876.

Obituary.—We regret to announce to our readers the death of Professor Herbert E. Copeland, teacher of Natural Sciences in the Indianapolis High School. The sad event occurred on Tuesday, Dec. 12th, and was caused by his devotion to his favorite studies. Abont 3 weeks before his death while he was fishing in one of the streams near Indianapolis to secure specimens for his scientific work, he fell into the water, and by this means contracted a severe cold. This was followed by an attack of brain fever, which later changed into the typhoid form, terminating in death. He leaves a wife and two small children. Professor Copeland was an enthusiastic student of the Sciences, and his successes in the class room and with the pen, gave promise of a brilliant future. In him the GAZETTE loses one of its firmest friends and most constant contributors. At the time of his death he had in preparation several articles which would have appeared in subsequent numbers.

RECENT PUBLICATIONS.—*The American Journal of Science and Arts*, November.—Dr. Gray reviews the Proceedings of the American Association for the Advancement of Science, Botanical Articles. He remarks that these are few and not of high importance.

The American Naturalist, November.—Dr. Geo. H. Perkins contributes an intersting article on the "Hygiene of House Plants," in which he assures the lovers of flowers that house plants are physically, intellectually and morally healthful. He states that they are injurious only as they increase the carbonic acid in the air, and as they give out injurious perfumes. He shows that both these effects are counterbalanced and that house plants are positively useful, "as they pour aqueous vapor into dry air, as they demand plenty of light and air, and on this account many a room, otherwise dark and unwholesome, is well lighted and aired." An interesting series of observations are given upon the growth of the flower-stalk of the Hyacinth, by A. W. Bennett, which go to prove that the "greatest energy of growth is displayed by the apical portion of the peduncle or that immediately beneath the flower-bud, the energy apparently decreasing regularly towards the base of the flower-stalk."

The Gardener's Monthly, November.—Two handsome California plants are described, *Tritelia laxa* and *Brodiæa coccinea*. Accompanying the description of the latter species is an excellent figure of the flower cluster and it promises to become one of our handsomest cultivated plants. The articles of this Magazine are so numerous and varied that we can not even name them, nor select the most prominent, for all are interesting.

Field and Forest, November.—The Flora Columbiana has been brought down among the *Gramineæ*, having stopped in this number with the genus *Eatonia*.

Bulletin of the Torrey Botanical Club, October.—Geo. E. Davenport mentions some peculiar variations of *Aspidium Thelypteris*, Swz. W. R. Gerard states that the fungi *Rhytisma Solidaginis*, and *R. Asteris*, which occur on the leaves of *Solidago* and *Aster*, have turned out to be insect galls.

Home and School, October.—John Williamson describes and figures *Trichomanes radicans*, found at Rock-castle Springs, Ky., by Mrs. Yandell. There are five figures, giving a general view of the plant, and magnified views of the fruit receptacle and sporangia.

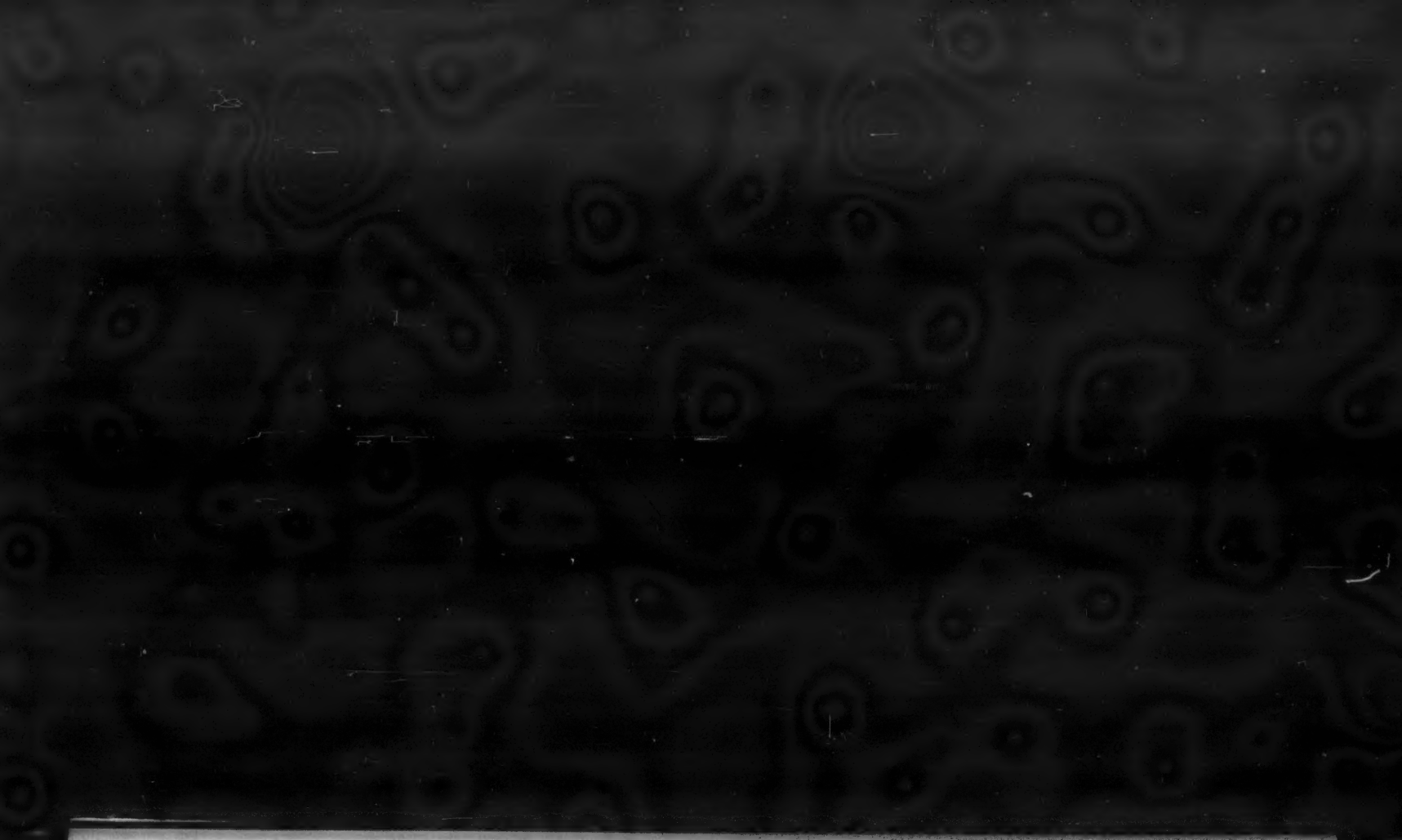
A Catalogue of the Forest trees of the United States, by Geo. Vasey, M. D.—This pamphlet is meant to illustrate the "collection of forest-tree sections on exhibition by the Department of Agriculture at the Centennial Exhibition." Sixteen feet is used as the point where a shrub becomes a tree. The pamphlet contains 38 pages giving the range and a few of the prominent characteristics of 419 trees. The two largest genera are the oaks and pines, each of which embrace about 30 species. In getting together the material for this exhibition, which was an immense labor, requiring great skill and patience, and which reflects so much credit upon the Department and its Botanist, four or five species unknown to our flora were obtained. "These are mainly in South Florida, and include two exogens, viz., an *Anona*, or Custard Apple, and a *Chrysophyllum*, or Star Apple; and one endogen, a Palm of the genus *Thrinax*."

Cereus grandiflorus and Cereus Bonplandii, by Richard E. Kunze, M. D.—This paper was read by Dr. Kunze before the Eclectic Medical Society of New York State. It contains a fine colored plate of each species and gives their history, description and therapeutical application.

VARIATIONS IN THE SIZE OF ASTERS. Although prevented by the nature of my work from a full study of the flora of Northern Indiana, yet in my walks along the Wabash and Eel or along one of our railways I can not help being struck with the rich reward a careful study of our fall Compositæ would yield to the zealous student. On every side we see the golden *Solidago*, bending its graceful head in conscious knowledge of its beauty, or the *Helianthus*, standing boldly erect, as if it held the soil by right. Scattered in their midst gleams the bright purple and blue *Asters*, while in almost every sodded nook and corner the bright *Taraxacum* turns toward you its cheerful face. In walks merely for pleasure at the close of a day's labor, many minor points escaped attention, yet one fact struck me particularly in regard to the *Asters*, and that was the little attention they paid to the manual as regards their size. For example *Aster dumosus*, L., said to be from 1°—3° high, very rarely falls below 4° and I have seen it six. Again *Aster ericoides*, L., instead of being from 1°—1½° high, ranges from 2°—4°. On the other hand an *Aster* which I judge to be *A. tenuifolius*, L., is very rarely found 2° high, and yet that is the minimum given in Gray's manual. M. S. C.

All communications should be addressed to

John M. Coulter, Hanover, Ind.

M. S. Coulter, Logansport, Ind.

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